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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,565	09/30/2003	Matthew E. Becker	42P17502	7904
8791 7590 11/28/2007 BLAKELY SOKOLOFF TAYLOR & ZAFMAN 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040			EXAMINER PATHAK, SUDHANSHU C	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 11/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/676,565

Applicant(s)

BECKER ET AL.

Examiner

Sudhanshu C. Pathak

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-32 is/are allowed.
- 6) ☒ Claim(s) 1,3,5-12,15,16,33 and 35 is/are rejected.
- 7) ☒ Claim(s) 2,4,13,14 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. Claims 1-35 are pending in the application.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-16, 24-28 & 29-32 are rejected under 35 U.S.C. 101, since the claimed invention is directed to non-statutory subject matter.

In regards to Claims 1, 9, 24 & 29, the Claim(s) are directed towards a signal, which has no physical attribute and merely describes the abstract characteristics, and thus is an abstract idea and is unpatentable. The Claim(s) falls into none of the statutory categories of patentable subject matter such as process, machine, manufacture, or composition of matter. Furthermore, the Claim(s) merely describes a signal, and does not provide any practical utility of the signal.

In regards to Claims 2-8, 10-16, 25-28 & 30-32, the Claims are inherently rejected as being dependent on Claim(s) 1, 9, and 24, which is rejected as described above.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 recites the limitation "the first phase slot" in line 8. There is insufficient antecedent basis for this limitation in the claim. The claim should recite "the first

time slot", and for the purposes of claim rejections below the claim is interpreted as "the first time slot".

6. Claim 17 recites the limitation(s) "the second time slot" in line 9 and "the third time slot" in line 11. There is insufficient antecedent basis for this limitation in the claim. The claim should recite "the second phase slot", and for the purposes of claim rejections below the claim is interpreted as "the third phase slot".
7. Claims 3 & 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Claim recites the limitation "remaining at the second amplitude level for a plurality of time slots", however the independent claim 1 recites "transitioning from the second amplitude level to the third amplitude level in the third time slot", therefore it is not clear as to if the signal transitions to the third amplitude level in the third time slot or if it remains at the second amplitude level in the third time slot.
8. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Claim recites the limitation "a fourth phase slot", however the claim (nor the independent claim 1) does not recite a first, second and third phase slots. The claim should recite "a fourth time slot", and for the purposes of claim rejections below the claim is interpreted as "a fourth time slot".

9. Claims 6, 16 & 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Claim recites the limitation "transition between amplitude levels occurs over a plurality of time slots", it is not clear since the independent claim 1 recites transitions occurring over a single time slot.

10. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Claim recites the limitation "a second time slot" in line 7, however the claim (nor the independent claim 1) does not recite a first time slots. The claim should recite "a first time slot" in line 6, and for the purposes of claim rejections below the claim is interpreted as "a first time slot".

Furthermore, the Claim on line 7 recites "remaining at the first amplitude level", this should actually be "remaining at the second amplitude level".

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1, 5, 7-11, 15 & 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (2003/0152154) in view of Dow (2002/0083359).

In regards to Claims 1, 5, 7-11, 15 & 33, Johnson teaches a method comprising: producing a modulated signal, the modulated signal being modulated over a plurality of amplitude levels, including at least a first amplitude level, a second amplitude level and a third amplitude level, and over a plurality of time slots, including at least a first time slot, a second time slot, and a third time slot, the modulated signal (Fig. 2) {Interpretation: The reference discloses a modulated signal comprising a plurality of amplitude levels over a plurality of time slots}; transitioning from the first amplitude level to the second amplitude level in the first time slot (Fig. 2, element “ t_8-t_9 ”) {Interpretation: The reference discloses transitioning from a first amplitude level “-1” to a second amplitude level “0” in the time slot}, remaining at the second amplitude level in the second time slot (Fig. 2, element “ t_9-t_{11} ”) {Interpretation: The reference discloses remaining in the second amplitude level in the second time slot}, and transitioning from the second amplitude level to the third amplitude level in the third time slot (Fig. 2, element “ $t_{11}-t_{13}$ ”) {Interpretation: The reference discloses transitioning to a third amplitude level in the third time slot}; further transitioning from the third amplitude level to an amplitude level other than the first amplitude level (Fig. 2, elements “ $t_{13}-t_{14}$ ”) {Interpretation: the reference teaches transitioning to another amplitude level “+1/2” which is not the same as the first amplitude level “-1”}; and transferring the modulated signal over a communications channel including a bus (Fig. 1, elements 105, 115, 140). However, Johnson does not explicitly disclose the transitioning occurring over a period of time.

Dow discloses the transmission and receiving of data (Fig.'s 2-3). Dow further discloses the transition from one amplitude level to another occurring over a period of time (Fig. 's 2-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Dow teaches a transition period over which data changes from one amplitude state to another and furthermore, the transition duration is a matter of design choice selected depending on the data rate transmission and the reliability of the received data stream.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (2003/0152154) in view of Dow (2002/0083359) and in further view of Vrazel et al. (7,149,256).

In regards to Claim 12, Johnson in view of Dow, disclose a method of modulating a signal as described above. However, Johnson in view of Dow does not disclose the second modulation mode comprises a signal phase.

Vrazel discloses a method of modulating a signal in multiple modes including amplitude and phase (Fig.'s 4-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Vrazel teaches a method of modulating a signal in multiple modes including amplitude and phase and this is implemented in the modulation method as described in Johnson in view of Dow so as to increase the data rate while reducing the average power for the transmission of data.

Allowable Subject Matter

14. Claims 2, 4, 13-14 & 34 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
15. Claims 17-32 allowed over the Prior Art of record.

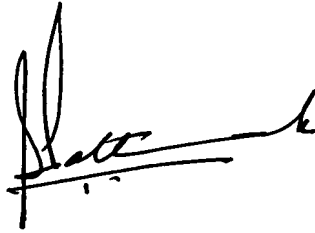
Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is 571-272-5509. The examiner can normally be reached on 9am-5pm.
- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on 571-272-3041.
- The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to be "Blatt", written over a horizontal line.